

## **ABSTRACT**

A method and apparatus for information embedding modulation and information extraction demodulation are presented which use analysis and/or synthesis filter banks.

- 5 Spectral control of the form of the composite signals arising from the embedding of digital embedded information signals into digital host signals is provided. Various implementations, including cable head-end and user-end systems using such modulators are presented. One aspect of the modulator allows for reduced noise spillover into adjacent communication channels in a multi-channel communication system. In some
- 10 implementations the analysis and the synthesis filter banks form perfect reconstruction filter sets. In other implementations, block transforms are used as the filter banks.

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